

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of claims:

Claims 1-29 Canceled

30. (New) A process for decorating the cylindrical wall of a plurality of containers comprising:

- a) mounting a plurality of moving mandrels on a loop circuit, each mandrel being mounted on a support capable of moving such that the axis of the mandrel remains parallel to a given direction D, and able to rotate around its axis while resisting a force exerted perpendicular to the axis;
- b) successively bringing each of the plurality of containers flush with one of the plurality of mandrels and fitting the container onto the mandrel;
- c) bringing the mandrel thus covered with the container into the vicinity of an impression roll driven in a continuous rotary motion around a fixed axis;
- d) rotating the mandrel around its axis while it is being moved towards the impression roll,
- e) running a transfer film bearing strip into the gap between the impression roll and the mandrel covered with the container at a linear velocity equal to the tangential velocities of the roll and container;
- f) bringing the mandrel and the impression roll into contact with each other, the cylindrical wall of the container and the surface of the impression roll being driven at a substantially equal tangential velocity, the contact translating into a force exerted by the impression roll on the mandrel through the transferable film bearing strip and the wall of the container;
- g) moving the bearing strip away from the surface of the container, with the result that the part of the transfer film remaining bonded to the container wall is detached from the bearing strip, thus bringing about the decoration; and
- h) moving the mandrel and container unit away from the impression roll to leave room for the next mandrel.

31. (New) The process according to claim 30 wherein the impression roll is a marking roll provided with an etched surface.

32. (New) The process according to claim 31 wherein the force applied by the raised parts of the etched surface causes the compression of a part of the transfer film which thins out and adheres to the wall of the cylindrical container and, when the bearing strip is moved away from the surface of the container, the marked part of the transfer film which remains bonded to the container wall is detached from the bearing strip, thereby bringing about the decoration being implemented.

33. (New) The process according to claim 31 wherein the marking roll is hot and the transfer film is a thermal transfer film.

34. (New) The process according to claim 33 wherein, when the bearing strip has left the marking area because of the rotation of the mandrel, the bearing strip is held against the cylindrical wall of the container long enough to allow the bearing strip and the marked transfer film to cool down to a temperature that makes the film easier to detach by cutting along the boundary between the marked area and the unmarked area.

35. (New) The process according to claim 30 wherein the mandrels are mounted on a turntable, the axis of rotation of which is parallel to the axes of the mandrels.

36. (New) The process according to claim 35 wherein the turntable operates stepwise, the mandrel finding itself at each stop flush with an area for handling or treating the container.

37. (New) The process according to claim 30 wherein the mandrel is made to rotate such that it is able to reach the appropriate velocity before it reaches the marking area.

38. (New) The process according to claim 37 wherein the impression roll rotates at a constant speed of rotation.

39. (New) The process according to claim 31 wherein the position of the axis of the marking roll is defined relative to the trajectory of the mandrels such that when they come into contact with each other, a force is applied to the contact generatrix line that is weak enough for the mandrel to be able to resist mechanically and strong enough for the transfer film to be marked by the raised parts of the etched surface of the roll.

40. (New) The process according to claim 33 wherein the cylindrical body is a flexible tube, the cylindrical skirt of which has a thickness of between 250 and 600 microns, the marking temperature required by the hot stamping roll is between 80 and 250°C and the support force of the roll on the mandrel is between 2 N/mm and 40 N/mm.

41. (New) The process according to claim 33 wherein the bearing strip is held, after marking, against the cylindrical wall of the container over an aperture angle α over 20°.

42. (New) The process according to claim 33 wherein the bearing strip is held, after marking, against the cylindrical wall of the container until the surface of the container reaches an average temperature below 80°C.

43. (New) The process according to claim 33 wherein a drive device of the bearing strip is mounted downstream from the marking area such that the tension of the bearing strip is as low as possible as it leaves the marking area.

44. (New) The process according to claim 33 wherein, during marking, a device driving the bearing strip is moved so that it enters the trajectory of the mandrels allowing the bearing strip to be applied against the container wall, the contact being maintained over an angular aperture over 30°.

45. (New) The process according to claim 33 wherein a cold air flow is circulated over the bearing strip as it leaves the marking area.

46. (New) The process according to claim 31 wherein, after fitting the container onto the mandrel, and beginning rotation of the mandrel, an optical determination is made of a pre-marked index on the container and the rotation of the mandrel is calculated such that the cylindrical wall of the container comes into contact with the marking roll surface by presenting itself according to a preset angular position, with a tangential velocity substantially equal to the tangential velocity of the etched surface of the marking roll.

47. (New) The process according to claim 46, wherein the device allowing the optical determination of a pre-marked index of the decoration is complemented by a second optical device connected to a corrective information system, which through the use of image analysis software, allows the angular and axial position of the mandrel to be corrected.

48. (New) A device including a means for running a transfer film bearing strip in a marking area at a controllable tension, a fixed plate placed opposite a turntable operating stepwise, the turntable being equipped with mandrels able to rotate around their axes parallel to the axis of rotation of the plate, the mandrels being brought in succession during the rotation of the plate into several work areas provided on the fixed plate, these work areas comprising:

- a) a feed area where a plurality of cylindrical bodies are brought opposite a mandrel and fitted around the mandrel;
- b) an area for depositing or marking a decoration on the cylindrical wall of the bodies including at least one impression roll in continuous rotation around a fixed axis parallel to the axis of the plate, placed at a spot such that when a mandrel comes to be flush with the roll, the roll exerts a support force distributed over a generatrix line, the mandrels being driven by rotation means, making it possible to pass from zero tangential velocity to a tangential velocity equal to that of the impression roll after a length of time less than that corresponding to the movement of the container from one work area to the next; and
- c) an area for removing the cylindrical bodies.

49. (New) The device according to claim 48 wherein the plurality of cylindrical bodies are cylindrical skirts of flexible tubes, the skirts of the flexible tubes decorated using a number of work areas provided on the fixed plate including:

- a) the area for feeding flexible tubes and fitting the cylindrical skirts of the flexible tubes around the mandrel;
- b) an optional area for removing the sprue on the tube head;
- c) an optional area for putting a lid on the dispensing orifice;
- d) an optional area for capping;
- e) the marking area;
- f) an optional area for inspecting the decorations obtained; and
- g) the area for removing the flexible tubes.

50. (New) The device according to claim 49 wherein, directly upstream from the marking area an indexation area is provided where an optical tracking device allows the angular position of a spot embodying a known particular point in the decoration to be detected and the rotation of the mandrel is actuated by a servomotor controlled using an algorithm which allows the necessary correction to bring the cylindrical body to the marking station at the right position and at the right speed of rotation to be calculated from data supplied by the optical tracking device.

51. (New) The device according to claim 50 wherein the optical tracking device is complemented by a second optical device connected to a corrective information system which, using image analysis software, allows the angular and axial position of the mandrel to be corrected.

52. (New) A process for decorating the cylindrical walls of a plurality of containers comprising:

- a) mounting a plurality of moving mandrels on a loop circuit, each mandrel having a diameter slightly less than the diameter of the cylindrical wall of the container and being mounted on a support capable of moving such that the axis of the mandrel remains parallel to a given direction D, the mandrel being mounted onto its support in such a way

that it is able to rotate around its axis while resisting a force exerted perpendicular to the axis;

- b) successively bringing each of the plurality of containers flush with one of the plurality of mandrels and fitting the container onto the mandrel;
- c) printing the cylindrical wall of each container in accordance with the required decoration with an ink or varnish promoting the adhesion of a transfer film;
- d) bringing the mandrel thus covered with the container into the vicinity of an impression roll, the roll being driven in a continuous rotary motion around a fixed axis parallel to the direction D;
- e) rotating the mandrel while it is being moved towards the impression roll at a speed correlated with that of the impression roll such that when the mandrel comes to be flush with the impression roll, the tangential velocity of the container wall in rotation is substantially equal to the tangential velocity of the surface of the impression roll;
- f) running a transfer film bearing strip into the gap between the impression roll and the mandrel, such that when it arrives in the gap, the transfer film is moving at a linear velocity substantially equal to the circumferential velocities of the impression roll and the mandrel;
- g) bringing the mandrel and the impression roll into contact with each other, the contact translating into a force exerted by the impression roll on the mandrel through the transfer film bearing strip and the cylindrical wall of the container, the force causing the compression of the transfer film, translating into an adhesion of a part of the transfer film to the printed part of the cylindrical container wall;
- h) moving the bearing strip away from the surface of the container, with the result that the part of the transfer film remaining bonded to the container wall is detached from the bearing strip, thus bringing about the decoration; and
- i) moving the mandrel and container unit away from the roll in order to leave room for the next mandrel.

53. (New) The process for decorating the cylindrical walls of containers according to claim 52 wherein the cylindrical wall of each container is printed in accordance with the required decoration with an ink or varnish promoting the rejection of the transfer film and that, when the

mandrel and the impression roll are brought into contact with each other, the contact translates into a force exerted by the impression roll on the mandrel through the transfer film bearing strip and the cylindrical wall of the container, the force causing the compression of the transfer film, translating into an adhesion of a part of the transfer film to the unprinted part of the cylindrical container wall.

54. (New) The process according to claim 53 wherein the transfer film has adhesive properties.

55. (New) The process according to claim 54 wherein the impression roll is hot with the result that when the impression roll leans against the sleeve through the transfer film, the latter acquires the adhesive properties.

56. (New) The process according to claim 30 wherein the impression roll is driven by a motor.

57. (New) The process according to claim 56 wherein the motor is an electric motor.

58. (New) The process according to claim 30 wherein the mandrel has a diameter slightly less than the diameter of the cylindrical wall of the container.

59. (New) The device according to claim 48 wherein the rotation of the impression roll preferably has a constant speed of rotation.

60. (New) The process according to claim 33 wherein the bearing strip is held, after marking, against the cylindrical wall of the container over an aperture angle α over 30° .

61. (New) The process according to claim 33 wherein the bearing strip is held, after marking, against the cylindrical wall of the container until the surface of the container reaches an average temperature below 60°C .

62. (New) The process according to claim 47, wherein the second optical device is a video camera.

63. (New) The device according to claim 48, wherein the mandrels are driven by servomotors.

64. (New) The device according to claim 48, wherein the tension of the strip is controlled as it leaves the marking area.

65. (New) The device according to claim 51, wherein the second optical device is a video camera.